

APQ-56 Improvement Program

3/6/57

1.10 Resolution Problem -

STAT

Presently, the resolution of the recorder is not equal to that of a 0.1 us transmitting and receiving system. Power supply ripple affecting resolution has been reduced to the very satisfactory level of one volt by a different connection of present components. A C.O. calling for this new connection has been issued. Laboratory examination of the oz recorder is still in progress. Present attention is on the defocusing vs sweep position problem for which no remedial action is yet available.

2.10 Recorder Cooler -

STAT

- 1) Permanent type cooler - The shop request for a change in drawing was received 3/5. Change Order was written 3/5 on the housing assembly. It was also found on 3/5 that a drafting error existed on the housing duct. This was changed at the same time the housing assembly was changed. Eleven complete sets are now being made in Production and one complete set in the Model Shop. Mod. Kit #1 is now 90% written.
- 2) Quick Type Cooler - All piece parts have been received except 2 terminal box covers for the blowers which are now in the Model Shop. One over due 3/4; one due 3/11.
- 3) Camera Cooling - Cameras for O1 and O2 have been sealed and equipped with louvered covers. Mod. Kit #2 has been written and given to Service Section 3/4/57.

4.4 RF High Voltage Power Supply -

STAT

The two major components, R.F. Coil and H.V. Capacitor are still outstanding; consequently, no progress for the past week.

6.10 P. E. Cell -

STAT

Three P. E. Cell Test Sets are being built and tested to establish the sensitivity of P. E. Cells. All sets have been completed. The correlation between sets is now being checked and further work is now being performed for correlation between sets and bulbs. The meters have been received from calibration and are being placed back into the sets. Engineering is procuring and calibrating all P. E. Cells for the Time Shared System and spares for that system.

8.10 Noise Figure

STAT

The problem of high noise figure and noise figure fluctuations should be considered as solved, provided that any condition which prevents a smooth and easy installation of crystals and holders in mixer is eliminated. It has been determined that the more common causes of the above mentioned difficulty were dirt and other foreign material on crystals and holders. Any burrs or uneven surfaces on crystals or holders should be considered good reason for rejection of part for use if they cause any binding as misalignment of parts during and after installation in mixer.

- 11.10 Quick Disconnect Waveguide - STAT
- Parts are now on hand to permit modification of all Time-Shared equipments. This change will be included in the Mod Kit to incorporate maggie & klystron fins since the simultaneous drawing hangers are involved. These drawings are now being checked in Drafting.
- 12.10 Pulse Cable Connectors - STAT
- No progress this week due to transfer. STAT
- 13.10 AGC - STAT
- Design a new ACC that will be less susceptible to stray pick-up and interference. A new model has been built and tested in the lab. Testing of the new toroids has been delayed due to Friedmann's absence. The new layout has not yet been completed in drafting. The draftsman is presently working on the proposed changes to the casting in the recorder.
- 14.7 Trigger Circuit Redesign (Overload at turn-on) - STAT
- An attempt is being made to incorporate the components of the existing trigger generator into a suitable blocking oscillator design so that the expense of a complete change will not be necessary.
- Components for the line circuit test model still have not been delivered but have been promised within a week.
- 15.9 Maggie Stem Pressure Seal - STAT
- A scheme for sealing around the maggie stem has been devised. It involves use of an over-size O-ring and beveled clamps. Work is underway to test this technique in the laboratory for effectiveness of seal and possible stress on maggie stem.
- 17.6 Wide Band Receiver - STAT
- Pre Amp and Post Amp are complete and ready for system test. Bandwidth is 21 Mc. and gain is 85 Db. for the combination. The video amplifier is completed except for retest so as to know its characteristics.
- 19.6 Receiver Design - STAT
- The actual design of the receiver has been started. Various amounts of time are being spent investigating techniques for improving the transient characteristic of the receiver. From this investigation a satisfactory design criteria will be obtained which will result in a system with the desired transient response and a suitable amplitude characteristic.

21.5 Pulse Width (quick fix) - STAT

No change since last report. Waiting for HV capacitors which are over-due.
Will have parts on hand to modify 3 RT's.

22.2 Resolution Test Set - STAT

A means of measuring recorder resolution is needed in the field. Several test sets are being built by SR using commercial type construction. The range resolution test and circuit will be essentially the same as is used in recorder precomposite test. A visual track resolution test will be included.